



# ENGINEERING AND TECHNOLOGY



Engineering and Technology: The following is to assist teachers and administrators in planning, developing, and implementing Engineering and Technology programs.

During the 2012-13 year we started the development of specific career pathways within the Engineering and Technology Education program of study that will utilize existing courses and will further allow for courses to be added meeting the initiative for students becoming Career and College Ready.

## New Secondary Pathways/Descriptions & Classification of Instructional Programs CIP Codes:

Below are the new Pathways with their new CIP Codes. Notice that 15.0000 (Engineering) and 21.0101 (Technology) are not listed. They have been removed for the 2013-14 school year. Students that have taken courses under those numbers will be able to move those courses into the new pathways offered to maintain their Preparatory and Completer Status.

### **Project Lead the Way Secondary Program of Study**

- 14.0101 PLTW** An instructional program that generally prepares individuals to apply mathematical and scientific principles to solve a wide variety of practical problems in industry, social organization, public works, and commerce.

### **Engineering & Technology Secondary Program of Study**

- 14.0201 Aerospace & Aeronautics Engineering** An instructional program that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of aircraft, space vehicles, and their systems; applied research on flight characteristics; and the development of systems and procedures for the launching, guidance, and control of air and space vehicles.
- 14.2901 Engineering & Technology Design** An instructional program that prepares individuals to apply mathematical and scientific principles to engineering problems involving marrying or coordinating multiple dissimilar systems to carry out single functions or achieve common purposes, organizing system components for maximum flexibility and utility, planning engineering projects involving multiple tasks and design solutions, planning design testing and evaluation procedures, resolving specification and requirement conflicts, and choosing among competing theoretical solutions.

- 14.7000      **Advanced Manufacturing**** A group of instructional programs that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of integrated systems for managing industrial production processes, including the optimization of human work factors, efficiency engineering, logistics and material flow, just-in-time manufacturing, industrial quality control, automation, cost analysis, and production coordination.
- 15.0100      **Civil Architectural & Construction Technology**** A group of instructional programs that prepares individuals to apply basic engineering principles and technical skills in support of architects, engineers and planners engaged in designing and developing buildings, urban complexes, and related systems. This includes instruction in design testing procedures, building site analysis, model building and computer graphics, engineering drawing, structural systems testing, analysis of prototype mechanical and interior systems, test equipment operation and maintenance, and report preparation.
- 15.0405      **Robotics & Automation**** An instructional program that prepares individuals to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in developing and using robots and automation devices. This includes instruction in the principles of robotics, design and operational testing, system maintenance and repair procedures, robot computer systems and control language, specific system types and applications to specific industrial tasks, and report preparation.
- 15.1101      **Power-Energy Engineering-Related Technologies**** A group of instructional programs that prepares individuals to apply basic engineering principles and technical skills in support of engineers engaged in a wide variety of projects. This includes instruction in various engineering support functions for research, production, and operations, principles of energy conservation, instrumentation calibration, monitoring systems and test procedures, energy loss inspection procedures, energy conservation techniques, and report preparation.
- 10.0100      **Graphic & Digital Communications Technologies**** Instructional programs that prepare individuals to function as equipment operators, support technicians, and operations managers in the film/video, recording, and graphic communications industries.